

**Atty. Docket No. 11141.80952**

**Express Mail Label No.: EM461380780US**

Enclosed herewith is a new patent application and the following papers:

First Named Inventor (or application identifier): Mark A. Mars

Title of Invention: Telephone Wire Distribution Center

1. ☒ Specification 11 pages (including specification, claims, abstract) / 16 claims (3 independent)
2. ☒ Declaration/Power of Attorney is:  
☒ attached in the regular manner.  
☐ NOT included, but deferred under 37 C.F.R. § 1.53(f).
3. ☒ 2 Distinct sheets of ☐ Formal ☒ Informal Drawings
4. ☐ Preliminary Amendment.
5. ☐ Information Disclosure Statement  
☐ Form 1449  
☐ A copy of each cited prior art reference
6. ☒ Assignment with Cover Sheet.
7. ☐ Priority is hereby claimed under 35 U.S.C. § 119 based upon the following application(s):

Country	Application Number	Date of Filing (day, month, year)

8. ☐ Priority document(s).

**NEW UNITED STATES UTILITY PATENT APPLICATION**  
**under 37 C.F.R. 1.53(b)**

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9. ☒ Statement Claiming Small Entity Status.
10. ☐ Microfiche Computer Program (Appendix).
11. ☐ Nucleotide and/or Amino Acid Sequence Submission.  
☐ Computer Readable Copy.  
☐ Paper Copy (identical to computer copy).  
☐ Statement verifying identity of above copies.

**NEW UNITED STATES UTILITY PATENT APPLICATION**  
under 37 C.F.R. 1.53(b)

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12. Calculation of Fees:

FEES FOR	EXCESS CLAIMS	FEE	AMOUNT DUE
Basic Filing Fee (37 C.F.R. § 1.16(a))			\$760.00
Total Claims in Excess of 20 (37 C.F.R. § 1.16(c))	0	18.00	\$0.00
Independent Claims in Excess of 3 (37 C.F.R. § 1.16(b))	0	78.00	\$0.00
Multiple Dependent Claims (37 C.F.R. § 1.16(d))	0	260.00	\$0.00
Subtotal - Filing Fee Due			\$760.00
	MULTIPLY BY		
Reduction by 50%, if Small Entity (37 C.F.R. §§ 1.9, 1.27, 1.28)	0.5		\$380.00
<b>TOTAL FILING FEE DUE</b>			\$380.00
Assignment Recordation Fee (if applicable) (37 C.F.R. § 1.21(h))	1	40.00	\$40.00
<b>GRAND TOTAL DUE</b>			<b>\$420.00</b>

13. PAYMENT is:


- ☒ included in the amount of the GRAND TOTAL by our enclosed check. A general authorization under 37 C.F.R. § 1.25(b), second sentence, is hereby given to credit or debit our Deposit Account No. 01-0850 for the instant filing and for any other fees during the pendency of this application under 37 C.F.R. §§ 1.16, 1.17 and 1.18.
- ☐ not included, but deferred under 37 C.F.R. § 1.53(f).

14. All correspondence for the attached application should be directed to:

Banner & Witcoff, Ltd.  
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Chicago, IL 60606-7407  
Telephone: (312) 715-1000  
Facsimile: (312) 715-1234

15. Other: Return Postcard

Date: November 29, 1999

By:   
William J. Klein  
Reg. No. 43,719

dlt

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

(Attorney's Docket No. 11141.80952)

Applicant or  
Patentee: Joseph Rocci

Serial or  
Patent No. Unassigned Filed or  
Issued: \_\_\_\_\_

Title: Telephone Wire Distribution Center

**VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS  
(37 C.F.R. § 1.9(f) AND § 1.27(c)) - SMALL BUSINESS CONCERN**

I hereby declare that I am

- ☐ the owner of the small business concern identified below:  
☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN Etcon Corporation

ADDRESS OF CONCERN 7750 Grant Street

Burr Ridge, Illinois 60521

I hereby declare that the above-identified small business concern qualifies as a small business concern as defined in 13 C.F.R. §121.12, and reproduced in 37 C.F.R. § 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time, or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled Telephone Wire Distribution Center

by inventor(s) Mark A. Mars and David W. Kirby  
described in \_\_\_\_\_

- ☒ the specification filed herewith  
☐ Application Serial No. \_\_\_\_\_, filed \_\_\_\_\_  
☐ Patent No. \_\_\_\_\_, issued \_\_\_\_\_.

If the rights held by the above identified small business concern are not exclusive, each individual concern or organization having rights in the invention must file verified statements averring to their status as small entities, and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR § 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR § 1.9(d), or a nonprofit organization under 37 CFR § 1.9(e).

Each person, concern or organization having any rights to the invention is listed below:

X No such person, concern or organization exists.  
— Each such person, concern or organization is listed below.

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

FULL NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

Separate verified statements are required from each named person, concern or organization having rights in the invention averring to their status as small entities. (37 CFR § 1.27).

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 C.F.R. § 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing therein, or any patent to which this verified statement is directed.

\_\_\_\_\_  
Joseph Rocci

NAME OF PERSON SIGNING

\_\_\_\_\_  
President

TITLE IN ORGANIZATION

\_\_\_\_\_  
7750 Grant Street, Burr Ridge, Illinois 60521

ADDRESS OF PERSON SIGNING

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## TELEPHONE WIRE DISTRIBUTION CENTER

### Background of the Invention

#### Field of the Invention

This invention relates generally to connector panels for coupling incoming paired telephone wires to wires running to various locations in a house or other type of building.

#### Related Art

In order to comply with a new telephone industry standard called Category 5, residential homes must be wired with four paired telephone lines coming into the residence. Category 5 also requires a separate dedicated pair of wires for every telephone jack in a house.

Under previous standards, telephone jacks could be looped in series requiring significantly fewer wires at the telephone wire distribution panel or center, which is typically located in the basement of a house. A block of paired series connectors has often been used to connect an incoming paired telephone line to several telephone jacks in various locations throughout a house. A significant shortcoming of this approach is that telephone wires leading to different rooms in a house often remain unlabeled and generally disorganized, causing unnecessary time and effort to be expended whenever the paired telephone wire leading to a particular telephone jack in a particular location of a house needs to be identified, disconnected from an input line, and/ connected to a second input line instead. In order to change a telephone jack from one input line to another, after identifying the line or lines leading to the telephone jack of interest, the wires will typically need to be un-bundled so that the output wire can be connected to an input wire located elsewhere in the block of connectors.

In light of the requirements of Category 5, namely, four input lines and a "home run," in other words, a separate dedicated paired wire, for each wired telephone jack, wiring a home according to Category 5's requirements presents an organizational challenge not previously addressed by prior art telephone wire distribution center. Accordingly, there is a need for a paired telephone wire distribution center for organizing input and output telephone wire pairs and labeling the location or room in a house to which an output paired telephone wire is run. Such a distribution center should facilitate organizing, labeling, identification, and the ability to readily switch a particular output wire pair from a particular input pair to any of the other input wire pairs. An additional practical consideration is that such a distribution center should be inexpensive to manufacture because the individuals who run telephone wire in homes typically are very cost conscious.

### Summary of the Invention

Accordingly, it is an object of this invention to provide a cost-effective apparatus and method for coupling one or more paired input telephone wires to one or more paired output telephone wires while facilitating: organizing, labeling, identification, and switching a particular output wire pair from a particular input pair to any of the other input wire pairs.

A telephone distribution center for organizing and coupling multiple paired input telephone wires to multiple output telephone wires is disclosed. Paired input lines may be coupled to respective pairs of punch down terminal strips. Each punch down terminal strip may include an electrically conductive terminal strip inserted into a row of insulation displacing punch down

connectors. Multiple paired output lines may be coupled to one or more punch down terminal strip pairs thereby coupling one or more paired output lines to the desired input line pair or pairs. A convenient place is provided for labeling the location of the telephone jack to which each paired output wire leads. A wire channel, wire channel hooks, and tie wire loops are provided for organizing paired input and output telephone wires. Mounting holes are also provided for fastening the telephone wire distribution center to a wall or other suitable mounting surface.

### **Brief Description of the Drawings**

FIG. 1 is an isometric view of a telephone wire distribution center in accordance with the principles of this invention.

FIG. 2 is an isometric view of a row of insulation displacing punch down connectors and an electrically conductive terminal strip.

FIG. 3 is a right side view of a punch down terminal strip comprising the electrically conductive terminal strip shown in FIG. 2 inserted into the row of insulation displacing punch down connectors shown in FIG. 2.

### **Detailed Description of the Preferred Embodiments**

Referring to FIG. 1, a telephone wire distribution center 100 is shown. Distribution center 100 includes eight electrically conductive terminal strips 134-1, 134-2, 134-3, 134-4, 134-5, 134-6, 134-7, and 134-8 inserted into eight rows of insulation displacing punch down connectors 102, 104, 106, 108, 110, 112, 114, and 116 ("102-116"). Each row of insulation displacing punch down connectors 102-116, includes a plurality of insulation displacing punch down connectors, such as



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for instance, punch down connectors 118-1 through 118-13. As will be apparent, any other suitable number of punch down connectors could also be used for a particular row of punch down connectors.

To use distribution center 100 to connect one or more input telephone wire pairs to one or more output telephone wire pairs for distribution to multiple rooms throughout a house, a first wire of a first input wire pair (not shown) would typically be electrically connected to a terminal strip, such as terminal strip 134-1, for instance. Such a connection could be made by inserting an insulated wire into punch down connector 118-1, for instance. Punch down connectors 118-1 through 118-13 are preferably insulation displacing connectors, which are well known in the art and automatically strip the insulation from a wire so that the wire becomes electrically coupled to terminal strip 134-1. Similarly, the second wire of the first wire pair could be electrically coupled to terminal strip 134-2 via punch down connector 120-1. Once both paired wires of the first pair are connected to terminal strips 134-1 and 134-2 as just described, 12 pairs of output wires can be electrically coupled to the first paired input wire using punch down connectors 118-2 through 118-13 and the corresponding punchdown terminals in row 104, reference numbers for which have been omitted from FIG. 1 in an attempt to keep FIG. 1 as uncluttered as possible.

Second, third, and fourth paired input wires could also be electrically coupled to terminal strips 134-3 and 134-4; 134-5 and 134-6; and 134-7 and 134-8, respectively, in an analogous manner so that: terminal strip 134-3 is electrically coupled to the first wire of the second paired input wire; terminal strip 134-4 is electrically coupled to the second wire of the second paired input wire; terminal strip 134-5 is electrically coupled to the first wire of the third paired input wire; terminal strip 134-6 is electrically coupled to the second wire of the third paired input wire; terminal strip

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134-7 is electrically coupled to the first wire of the fourth paired input wire; and terminal strip 134-8 is electrically coupled to the second wire of the fourth paired input wire.

The four input wires could be routed through channel 136, which separates rows 102, 104, 106, and 108 from rows 110, 112, 114, and 116. Channel 136 may include wire channel hooks, such as wire channel hook 138 for retaining input and output wire pairs neatly and in an organized manner within channel 136. Cable tie mounting loops such as, for instance mounting loop 140 could be provided in order to facilitate bundling of input and/or output wire pairs to the front surface 142 of the distribution center 100.

While input wire pairs are generally organized horizontally, in other words, along the direction indicated by double-headed arrow 144, with first through fourth input wire pairs being electrically coupled to terminals strip pairs 134-1/134-2, 134-3/134-4, 134-5/134-6, and 134-7/134-8, output wire pairs are generally organized vertically, in other words, in the direction of double-headed arrow 146. For instance, the first paired input wire, also referred to as line 1, is coupled in series to each insulation displacing terminal connector 118-1 through 118-13. Accordingly, label area 148-1 provides space for a label such as master bedroom, or kitchen, or the like. A paired output wire (not shown) could be connected to terminal connector 118-2 and the corresponding paired terminal connector of row 104 to connect the paired output wire leading to the bedroom to input line 1. To change the input line to which that paired output wire is coupled, the output wire can simply be removed from the terminal connectors 118-2 and the corresponding paired terminal connector of row 104 and connected to a different pair of terminal connectors, for instance, a pair of connectors from rows 106 and 108 for line 2, a pair of connectors from rows 110 and 112 for line 3, or rows 114 and

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116 for line 4.

In a similar manner, additional paired output lines can be labeled using other labeling areas below labeling area 148-1 for paired output wires leading to other rooms or locations in a house. A paired output wire leading to a particular location can then subsequently be readily identified, uncoupled from a first input line, and coupled to a different input line much more efficiently than is possible with prior art telephone wire distribution centers. Each punch down connector row 102-116 is shown in the drawings having 13 punch down connectors per row. As will be apparent, other suitable numbers of connectors per row may be used as desired. Similarly, while four input lines are shown, other desired numbers of input lines may also be used as desired.

Mounting holes, such as, for instance, mounting hole 150, are provided for mounting telephone wire distribution center 100 to a wall or other suitable surface.

Referring to FIG. 2, punch down connector row 102 and terminal strip 134-1 are shown in more detail than in FIG. 1. Terminal strip 134-1 may be made of plated metal or any other suitable electrically conductive material. Terminal strip 134-1 includes a plurality of termination areas, such as termination area 200 for electrically coupling wires to terminal strip 134-1. Terminal strip 134-1 includes a plurality of diagonally upwardly projecting fingers, such as finger 202 for engaging an upper surface 300 (shown in dashed line in FIG. 3) of a groove, such as groove 204 in order to keep terminal strip 134-1 from being inadvertently removed from punch down connector row 102 once terminal strip 134-1 has been inserted into punch down connector row 102.

As will be apparent to those of ordinary skill in the art, telephone distribution center 100 and punch down connector rows 102, 104, 106, 108, 110, 112, 114, and 116 may be made of plastic or

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any other suitable electrically non-conductive material using stereolithography or any other suitable process for forming these components. Several of such processes are well known in the art.

This invention has been described with reference to certain preferred embodiments. Modifications may occur to others upon reading and understanding the foregoing detailed description. This invention includes all such modifications to the extent that they come within the scope of the appended claims or their equivalents.

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WE CLAIM:

1. A telephone wire distribution center comprising

a front substantially planar surface;

at least one pair of punch down terminal strips attached to the front surface, each termination  
area of a particular punch down terminal strip electrically coupled in series to every other  
5 termination area of the same punch down terminal strip; and

a region of the front surface for labeling at least one wire pair.

2. The telephone wire distribution center of claim 1, wherein the front surface  
comprises: a wire channel for routing paired telephone wires.

3. The telephone wire distribution center of claim 2, further comprising: at least one  
wire channel hook for retaining wire pairs in the wire channel.

4. The telephone wire distribution center of claim 2, wherein the wire channel is located  
between two pairs of the punch down terminal strips.

5. The telephone wire distribution center of claim 4, wherein the wire channel separates  
a first two pairs of the punch down terminal strips from a second pair of the punch down terminal  
strips.

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6. The telephone wire distribution center of claim 5, further comprising a label for each input telephone wire electrically coupled to one of the punch down terminal strips.

7. The telephone wire distribution center of claim 6, further comprising a plurality of surface regions for labeling each output telephone wire pair electrically coupled to one of the pairs of punch down terminal strips.

8. The telephone wire distribution center of claim 1, further comprising: at least one tie-wire ring for bundling a plurality of wires to the distribution center.

9. The telephone wire distribution center of claim 1, wherein at least one of the punch down terminal strips comprises a row of insulation displacing connectors.

10. The telephone wire distribution center of claim 9 wherein at least one punch down terminal strip comprises: an electrically conductive terminal strip inserted into a row of insulation displacing connectors.

11. A method of organizing telephone wires comprising the steps of:  
connecting a paired input wire to a pair of electrically conductive terminal strips;  
connecting a plurality of paired output wires to the pair of electrically conductive terminal strips; and

5 labeling the destination of the paired output wires on the distribution center.

12. The method of organizing telephone wires as in claim 11, further comprising the step of: routing paired telephone wires through wire channel hooks in a wire channel of the wire distribution center.

13. The method of organizing telephone wires as in claim 12, further comprising the step of: bundling the plurality of wires in the wire channel.

14. A telephone wire distribution center comprising:  
means for connecting a paired input wire to a pair of electrically conductive terminal strips;  
means for connecting a plurality of paired output wires to the pair of electrically conductive terminal strips; and  
means for labeling the destination of the paired output wires on the distribution center.

15. The telephone wire distribution center as in claim 14, further comprising: means for routing paired telephone wires through wire channel hooks in a wire channel of the wire distribution center.

16. The telephone wire distribution center as in claim 15, further comprising: means for bundling the plurality of wires in the wire channel.

**Abstract of the Disclosure**

A telephone distribution center for organizing, labeling, and coupling multiple paired input telephone wires to multiple output telephone wires. Paired input lines can be coupled to respective pairs of punch down terminal strips. Each punch down terminal strip is an electrically conductive terminal strip inserted into a row of insulation displacing punch down connectors. Multiple paired output lines can be coupled to one or more punch down terminal strip pairs thereby coupling one or more paired output lines to the desired input line pair or pairs. A convenient place is provided for labeling the location of the telephone jack to which each paired output wire leads. A wire channel, wire channel hooks, and tie wire loops are provided for organizing paired input and output telephone wires. Mounting holes are also provided for fastening the telephone wire distribution center to a wall or other suitable mounting surface.



# FIG. 1

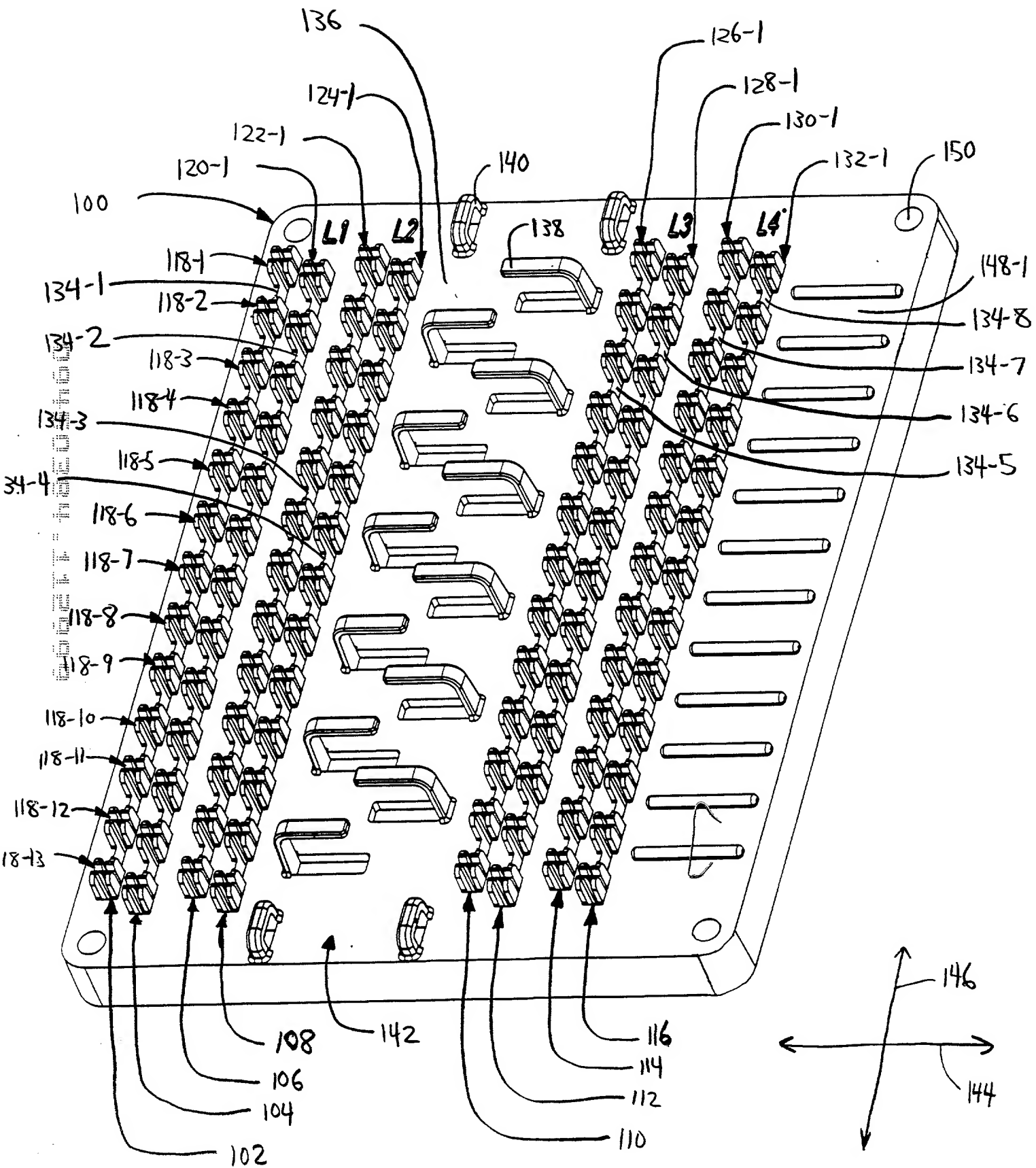


FIG. 2

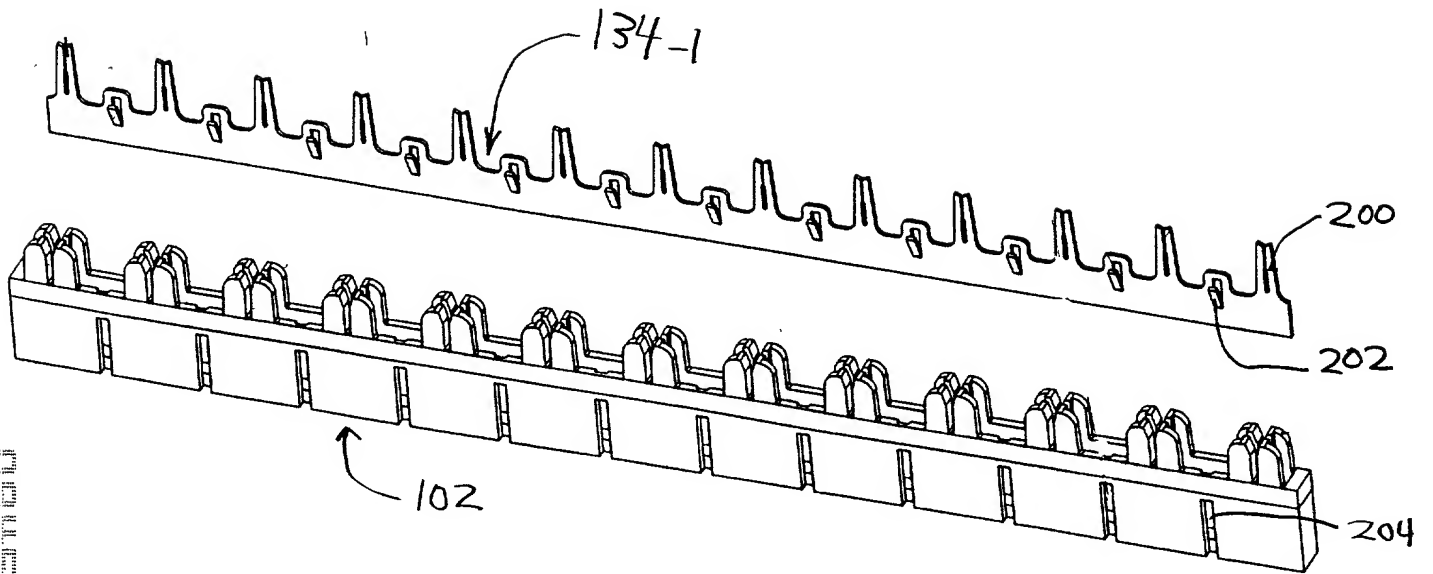
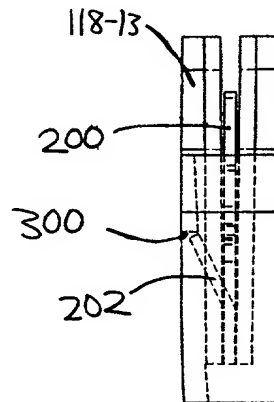


FIG. 3



## DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

### TELEPHONE WIRE DISTRIBUTION CENTER

the specification of which is attached hereto unless the following space is checked:

\_\_\_\_\_ was filed on \_\_\_\_\_ as United States Application Serial Number or PCT International Application Number \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT international application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s):

	<u>Number</u>	<u>Country</u>	<u>Day/Month/Year Filed</u>	<u>Priority Not Claimed</u>
1.				<input type="checkbox"/>
2.				<input type="checkbox"/>

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

	<u>Application Number</u>	<u>Filing Date</u>
1.		
2.		

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

	<u>Application Number</u>	<u>Filing Date</u>	<u>Status — patented, pending, abandoned</u>
1.			
2.			

I hereby appoint the following attorneys and agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:  
as my Attorneys.

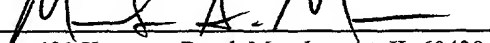
Jon O. Nelson	Reg. No. 24566	John P. Iwanicki	Reg. No. 34628
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Christopher J. Renk	Reg. No. 33761	William J. Klein	Reg. No. 43719
Marc S. Cooperman	Reg. No. 34143	Janice V. Mitrius	Reg. No. 43808
Joseph P. Krause	Reg. No. 32578	Christopher P. Moreno	Reg. No. 38566
Robert Hart	Reg. No. 35184		

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor (given name, family name): Mark A. Mars

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Citizenship: U.S.A.  
Post Office Address: 490 Kromray Road

Date: 9/15/99

Full name of second joint inventor, if any (given name, family name): David W. Kirby

Inventor's signature:   
Residence: 13261 Fox Hill Drive, LeMont, IL 60439  
Citizenship: U.S.A.  
Post Office Address: 13261 Fox Hill Rive

Date: 10/23/99